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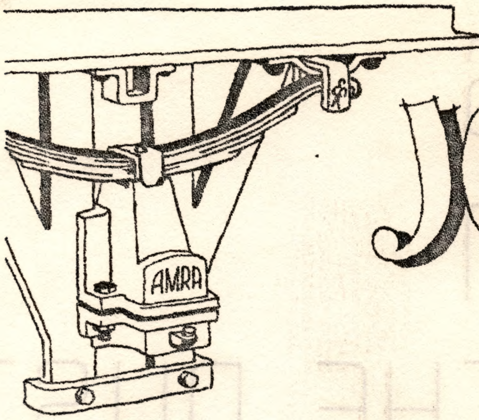
ON THE COVER

Jim Fainges drew this picture of a V.R. diesel hydraulic 'M' Class locomotive from a colour slide taken by Geoff Baxter. The locomotive was engaged in shunting duties at Newport.



Editorial ...
JOURNAL BOX ...

Contributions to "Pop Valve" usually provide a fairly wide cover on a variety of interesting subjects, and this issue is no exception. Sometimes letters are frankly technical, often they are reminiscent or are of general interest, and sometimes we find a writer with a real axe to grind. Anyhow, most of the letters speak for themselves or require only a short reply. Roger Hannaker's letter, however, is an exception and as the answer to his query concerns the ninety-five per cent of readers who unaccountably have not yet contributed to "Journal" it is appropriate to say something on the subject here and now.

Roger has not long been a member of AMRA and so he probably has no access to back numbers of "Journal" from which he can see for himself the type of article we have hitherto printed. So far we have been omnivorous; we print all we can get because it takes anything up to ten articles to fill each issue and forty articles a year is a big assignment, so any article on a railway subject is likely to be suitable for inclusion. We have members with a wide diversity of interests so we can afford to derive our articles from a wide field knowing that while we cannot suit everybody all the time, we can at least provide something for everybody at some time or another.

However, we must remember that the name of our association in full is the Australian Model Railway Association, which whenever possible, should be the keynote for any prospective contributor. In other words, we should let our articles be about modelling or about models, and should write on prototype subjects in such a way as to show their application to modelling. All this allows the writer plenty of scope. British, American and Continental firms have supplied the market with plenty of model railway material and all three types of railroading, although basically similar, have great differences in detail making it important for us to study their types of rolling stock and methods of operation. Added to that we have the ever-growing number of Australian modellers interested in the trains of their own country and wanting information on how to build them and run them.

Any reader with an operating layout could well begin his essay into journalism by describing the layout - not forgetting to send us a track plan even if it is only roughly sketched - and telling us what type of track he uses, what scenery there is (if any), what locomotives he uses and what rolling stock, and whether he operates to a timetable. There is so much to write about really; it is only a matter of making a start.

BLOSSOMS IN THE DUST

by Jack McLean

PART 1.

Shortly after the First World War a new soldier settlement irrigation area was opened up in Victoria's far Northwest, at a place called Red Cliffs, about nine miles south of Mildura. The line to Mildura, which had been open since 1903, passed that way and so, in 1920, Red Cliffs acquired a station - a "Mallee shed" - with a flag, a lamp and a nameboard.

The farmers in the area had grubbed most of the mallee scrub to clear space to sow grain; when the rain didn't come and the wind did the soil blew away, often causing red dust storms in Melbourne, 350 miles away. I can remember these dust storms, but what they must have been like in the Mallee itself I never knew until about 1940 when I made a 250 mile goods train trip through the area.

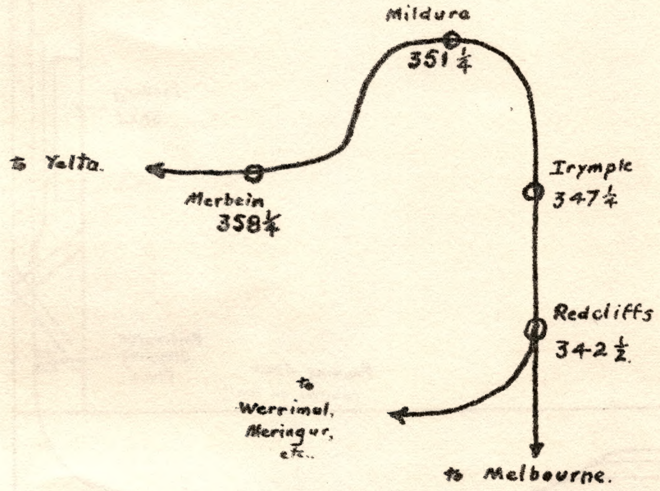
Some distance south of Red Cliffs we ran into the dust; it filtered in through the guard's van windows in little ridges and as one looked ahead through the cupola windows the train disappeared into a milling sea of sand. If you were quick enough you could see the repairers working on the line, wearing industrial respirators. It was at about this time, incidentally, that successful experiments were being made with fences of old corrugated iron to deflect the sand over the line where it had previously been derailing trains and causing hot boxes on rolling stock.

Into this area in 1922, came Victoria's first successful rail motors, introduced to serve the increasing populations of Red Cliffs and Merbein who lacked commercial facilities such as schools, stores and banks of their own and were plagued by poor roads composed of stifling dust in the summer and thick, sticky mud in the winter. Victoria had made several attempts at solving the problem of light passenger demand and infrequent service, but the first mechanically successful solution was the AEC lorry mounted on railway wheels, with passenger accommodation built on the back.

The original empty trip took place between Newport and Mildura and was a publicity run, which took three days for the 350 miles so that as many people as possible en route could see the new machine. Altogether nineteen of these vehicles were built between 1922 and 1925. The last one ran between Fawkner and Somerton and acquired the nickname "The Beetle" after running up some colossal mileage.

The service apparently varied from month to month, depending on seasons. Generally Merbein services connected with trains to and from Melbourne and the motor ran at times convenient for schoolchildren, shoppers, football fans and theatregoers. The Saturday service was augmented during the winter by a steam train which had a Mallee car attached, on which the low steps could be used when the train stopped at the rail motor stopping places.

There were eleven of these places probably consisting of a notice board, surmounted by a lamp (with red flaps attached) and a tube containing the red flag. Perhaps a couple of sleepers were placed on the side of the line to assist passengers joining or alighting, but more likely the rail motor stopped in the centre of the level crossing. These rail motors were single ended and therefore turntables were required. Short turntables (26 ft. long) were provided at Red Cliffs and Merbein while at Mildura, the locomotive turntable was used.



On a typical Saturday, the motor left Mildura at 6.45 for Merbein, returning in time to connect with the Melbourne passenger train at 8.0 a.m. At 9.0 a.m it made a return trip to Red Cliffs, returning to Mildura at 10.15 with shoppers. The shoppers returned home on the 11.25 and the motor was back in Mildura at 12.45. The 1.0 p.m. return trip and the 2.15 p.m. return trip to Merbein were probably for football followers and during this time, the steam train made trips to Red Cliffs for the fans.

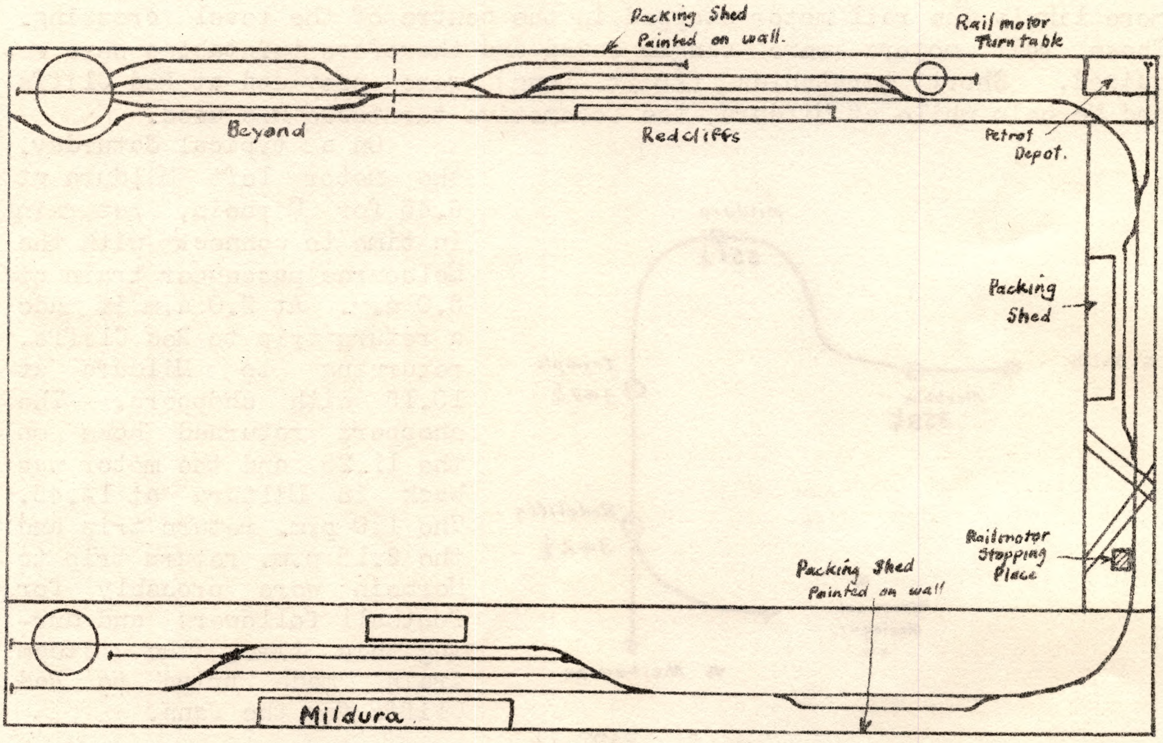
PART 11.

I suppose most model railways are built in garages - I don't know I just suppose! In any case, most of them seem to be built round the edge of something like the inside of a garage or room or the outside of a table. Generally too, there is room in these locations for only two stations, if that.

The main stations concerned in this story are Mildura and Red Cliffs. Irymple is only an intermediate station although quite an interesting one, and what goes on between Mildura and Merbein is actually repeated between Mildura and Red Cliffs. Mildura is modelled against a backdrop of Cureton Avenue's modern buildings and Red Cliffs against the background of a large packing shed. Beyond is the extension of the two lines, the main line to Melbourne and the branch to Werrimul and Meringur.

As I see it, it is difficult to fit more than two stations into the average garage but the rail motor service gives you the opportunity to have railmotor stopping places and as shown in the diagram on page 6, a good place is clean on the road intersection over which the railway runs diagonally.

On the main line, there could be the daily passenger train, with a B class Diesel, three or four cars and a van. The up fast goods would leave Mildura when the passenger train arrived and might even pick up at Red Cliffs before going BEYOND. Here it would run round and reverse the van before coming back into the picture as the down fast goods which on arrival at Mildura would be stowed away somewhere and then the Diesel would take over the passenger train which would be ready in the platform, having been prepared by the yard shunter.



Suggested Layout Based on Mildura - Redcliffs Area. JT 21-12-'60

The roadside goods would no doubt be a T class diesel and would shunt at the intermediate sidings leaving the results at Red Cliffs to be picked up by the up fast goods. Similarly on the down the roadside would pick up what had been left by the down fast and distribute them to the intermediate sidings. One day a week the goods goes out to the branch and brings back a load of wheat or perhaps a few mallee roots, but of course, those who aren't looking carefully don't realize that it finishes up at BEYOND just like everything else!

An AEC railmotor would be slightly anachronistic with all these diesels, but a 102 hp Walker Gardiner would do the job now, if there was such a job to do. On the other hand the AEC would fit in well with an A2 on the passenger and fast goods train and a D3 or a K on the roadside or the branch. Of course if you go that far you had better make the branch train a mixed. The only thing that is missing now is a dust storm and I think we can do without that!

BASIC 2-RAIL

by Jack Makin

When electricity was first applied to model railways as a motive power in place of clockwork and steam the designers,faced with the problem of conveying current to and from locomotives, adopted the simple device of providing a third rail as one side of the circuit, and using the running rails as the other side; a method which is still used extensively. Sometimes the third rail is placed outside the running rails; more often it is between them, and each system has its champions.

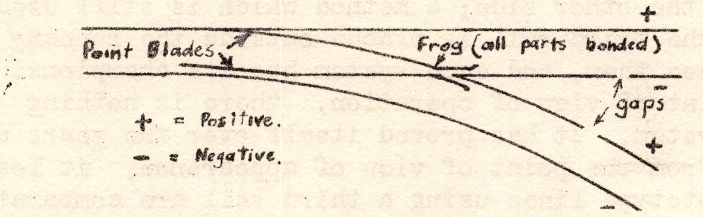
From the point of view of operation, there is nothing wrong with the three-rail system. It has proved itself over the years as solid and reliable. But from the point of view of appearance, it leaves much to be desired. Prototype lines using a third rail are comparatively rare; the only ones I can think of being the electrified lines of the Southern Region of British Railways. Practically all othersuse only two, and it is desirable that model railways, in the interests of realism, should do the same. The urge to bring this about has led to the development of the stud-contact and two-rail systems. Of these, the latter has the advantage of greater realism and simpler and less laborious installation.

Basically, the system is very simple. One of the running rails conveys current to the loco; the other returns it to its source. This means that there must be no metallic contact between the rails. At the low voltages commonly used for model railways, the wooden or fibre sleepers provide sufficient insulation. However, a pair of metal wheels on a metal axle constitutes a dead short circuit and for this reason it is essential that insulating wheels should be used on one side at least. Modern practice is to make all the running wheels of some hard insulating substance, such as bakelite, and these are very satisfactory, and in my opinion somewhat quieter in running than metal wheels.

Locomotive driving wheels, however, are still made of metal, but with the rims insulated from the centres on one side of the engine. The insulated rims serve to pick up the current from one side of the track and transfer it, through brushes or wipers insulated from the frame, to the "live" side of the motor, the other side of which is "grounded" in the frame so that the current passes via frame, axles and non-insulated wheels to the opposite rail which returns it to the source. Methods of reversing and speed control are the same as for three-rail, and sectioning can be carried out by isolating one or both rails of the section from the rest and feeding them through switches on the control boards. It is important that all rail joints be bonded by jumper wires, except at section gaps, in order to reduce resistance to the current flow.

At first sight, it might seem that turn-outs would provide a serious problem owing to the fact that the diverging rail crosses the gauge between point-blade and frog. The answer, however, is almost absurdly simple. All that is necessary is to leave gaps between the frog rails and the inner rails of the diverging tracks. The point-blades, lead-rails and frog are thus isolated from the remainder of the track except for the contact provided by one or other of the point-blades pressing against its adjacent stock-rail. Since the two stock-rails are of opposite polarities,the movement of the points causes a change in polarity of the whole turn-out assembly, bringing it in each case to the correct one, according to which direction the locomotive is to take.

Let us assume, for example,that the train is travelling on a single track approaching a junction, and that the right-hand rail is positive, and the left-hand rail negative. If the train is to diverge to the left the points will be moved to the right, bringing the blade against the right-hand stock rail and making the blade, lead-rail and frog positive. Since the right-hand wheels will pass over them, their polarity will be correct. Moving the points to the left will divert the train to the right-hand track, and make the turn-out assembly negative which again is correct, since the left hand wheels will pass over it.



Crossovers between adjacent pairs of rails present no difficulty since the gaps at the frogs of the two simple turnouts which constitute a crossover prevent any short circuiting. It is essential, of course, when an engine is using the crossover, that both tracks are correctly polarised, i.e. both right-hand rails positive,both left-hand rails negative, or vice versa, otherwise the engine will not proceed beyond the first frog-gap.

A greater problem is presented when we come to such devices as the diamond crossing and the single or double slip. Since there is no automatic change of polarity on these devices resort must be had to switching and care taken to isolate certain components. This subject was dealt with very fully by Louis Aa in the August 1958 number of Journal, and I refer those interested in the subject to his article. It is quite possible to construct a railway entirely without the use of any of these devices, and in prototype practice they are rare in comparison with simple turnouts and crossovers.

An interesting point with regard to two-rail when used with permanent magnet motors is that with a given track polarity a given locomotive will always travel in the same direction irrespective of which way it is pointing. In other words, if your engine is going from east to west, and you pick it up and turn it round, it will continue to travel from east to west.

This poses a problem in connection with turntables. If the rails of the table are permanently wired into the circuit,a reversing switch will be necessary to bring them to the same polarity as the fixed rails. Another method would be to energise the table rails directly from the fixed rails by means of wiper contacts placed around the turntable pit so that as the table lines up with any track its rails take their power from the fixed rails of that track in the same polarity.

In the matter of track-laying, the two-rail system has it all over the others. Only two rails need be laid, there are no complications, and far less cutting and fitting of rails at turn-outs. Of the improvement in appearance, there is no possible doubt whatever.

MODEL RAILWAYS ARE SOME USE!

In England the Atomic Energy Commission runs a Hornby 'Dublo' 2-6-4 tank locomotive which tows an open wagon carrying a beaker of water used to catch radio-active particles for analysis.

In Wagner's Guide to Seefeld, Austria, may be found the following: "The frequency of trains stopping in Seefeld has increased remarkably since the incorporation of the town into the railway system in 1912"!

17/7/60 Ern Raddatz, Woomera, S.A.

CUCKOO

The Director of the Post Office Telephone Research Station in London has stated that Britain's highly developed electronic telephone exchanges deserve a more elegant and less power consuming system than bells and envisages the replacement of the telephone bell by what he calls a pleasant, bird-like whistle. "The electronic bird call", he says, "would seem to be the answer; homes and offices could resound with bird notes like a bush clearing"!

This gives rise to interesting speculation. Would the subscriber be allowed any choice or would it all be settled in favour of the pied mudlark by the back room boys of the research station, to be followed by the screech of the sulphur crested cockatoo for those who did not answer their 'phones quickly enough? In any case, is there any need to stick to birds? For animal lovers there could be the sounds of dogs barking, pigs grunting or cats on the roof, while for us there is a world of sound of our own such as Westinghouse pumps, escaping steam and diesel electric horns. We could even have a genuine Casey Jones six barrel quill.

NOTES ON TRACK CONSTRUCTION

by Ernie Dean

This article is a condensed version of two very early contributions to 'Journal', entitled "TRACK & LAYOUT" and "BUILDING A MODEL SWITCH", made by Ernie Dean for the November 1951 issue. The original drawings appear to be lost so a fresh point diagram has been prepared.

Editor.

Track or permanent way is every bit as important as locomotives and rolling stock and every model railway enthusiast can well afford to pay more attention to what his trains and equipment run on than to the actual operation itself. Track is perhaps the most important item of any railroad system. The best cars and locos will not run properly over imperfectly laid track and the same bad track, once laid, is hard to change for the better. A working knowledge of track and benchwork construction is essential and enables you to go ahead and plan a good layout in whatever space you may have at your disposal, whether it be in a shed, an attic or a spare room.

Prototype railway track, which we endeavour to copy in miniature, consists mainly of a foundation of ballast, gravel or cinders; wooden cross ties or sleepers are then set into the ballast and the rails are spiked to the sleepers. In 'O' gauge the sleeper has a scale cross section of 3/16" square, but a certain tolerance is allowable and anything smaller would be too small and fragile to take the spikes or nails. Then again, anything larger than $\frac{1}{4}$" wide would definitely be out of scale proportion. The recommended size is $\frac{1}{4}$" wide x 3/16" thick. The length of the sleeper, or tie, is $2\frac{1}{4}$" minimum to $2\frac{3}{8}$" maximum, and for those using outside third rail, a sleeper $2\frac{3}{4}$" in length is spaced at every fifth tie.

When sleepers are being laid for straight track it is a good idea to line up a quantity of them side by side and to spike each alternate one; a nail in the centre is quite enough; afterwards the spare sleepers can be picked up and used elsewhere. Before rail is laid into position a good idea is to mark a centre line through the sleepers after they are tacked down, which will help to locate the rails when they are being gauged into position.

Modellers in the United States and in England can get brass or steel rail that is drawn to correct dimensions to cover light (50 lb.) to heavy (152 lb.) main line track. Here we have to contend with a rail, or rather a brass section referred to as '702' section, as a substitute for scale rail. Unfortunately, this section is much over scale and only recently has anything become available to replace it. Brass rail can be oxidised or painted to give it an improved appearance.

Once you start to lay rail it is in your interests to acquire a reliable track gauge as at this stage you must be most exact and particular with your work. Anything that is only just "near enough" will not accurately gauge your track. There are a few so called track gauges on the market which are not worth looking at, so when you go and buy one, have some means of being able to check it correctly. The gauge in 'O' gauge is $1\frac{1}{4}$", which equals 1.250". In 'HO' and Commercial 'OO' the gauge is 16.5 mm. A.M.R.A. and N.M.R.A. standards are quite clear regarding the tolerances to which the modeller and the manufacturer must adhere.

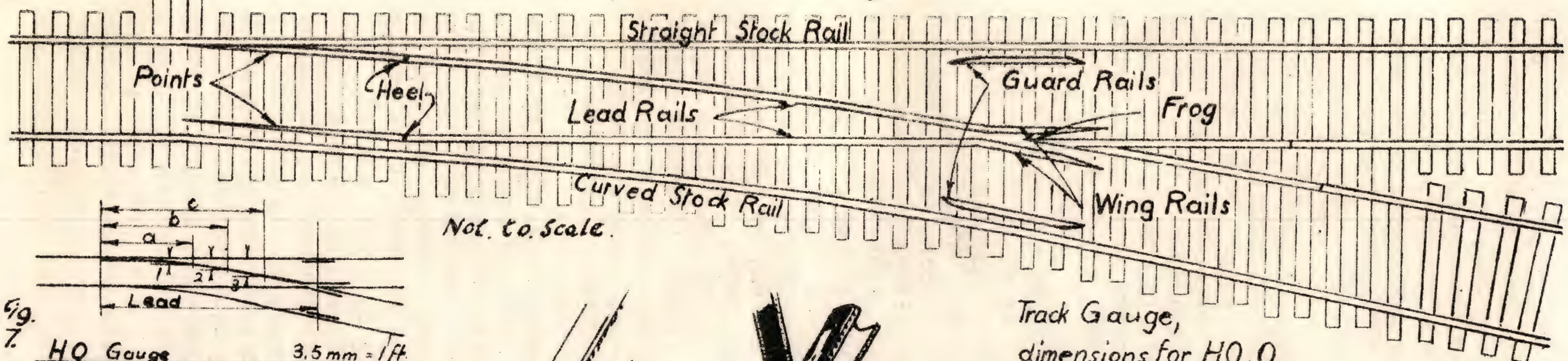
A serviceable 'O' gauge track gauge can be made from a piece of bright mild steel about $\frac{3}{4}$" x $\frac{1}{8}$" x $1\frac{1}{2}$" filed or machined to give the gauge required, namely 1.250". Recess the centre to clear the guard rails, frogs and centre rails if these are used and leave two spigots made to 5/64", being the check gauge clearance for the guard rails on each side of the frog on a switch or point. I have found this type most efficient for laying all forms of track, curves and switches. Note that the spigots on the track gauge do not foul the spikes holding the rail.

The same method can be employed for the smaller gauges, using a 16.5 mm track gauge, which is equal to 0.650 inches, and using a check gauge clearance of 1.25 mm, which equals 0.0492 inches.

A switch, turnout or point usually consists of a piece of straight track from which diverges another track composed of a short curve connecting the straight point blades and a straight frog. In the prototype the diverging track is not all curved, but in model railroading practice a switch with all curved track, including a curved frog, will work all right, although it is not correct. We build our cars and locomotives to scale, so we should look after the track too. Switches are known by the number of the frog angle. If the frog has an angle of 1 in 6, then the switch is a number 6; on a model railway a number 5 is the minimum for general use. Referring to the plan of the point, we have the straight stock rail on one side and the curved stock rail on the other, then we have the wing rails on each side of the frog extending into the lead rails which meet the point blades. These are installed separately for a No. 6 or upwards. Then we have the guard or check rails, fixed opposite the frog.

Next come the ties or sleepers. Notice how they vary in length till just past the frog, after which standard sleepers are used. In 'O' gauge as mentioned earlier, the standard sleeper is 3/16" square and $2\frac{3}{8}$" in length, although many modellers prefer a sleeper $\frac{1}{4}$" wide by 3/16" thick which gives more room for spiking down the rail and less chance of splitting. Another factor here is the frequent use of the over scale "Austral bronze" '702' section rail. In 'HO' gauge, sleepers are $\frac{1}{8}$" wide by 1/16" and $1\frac{1}{4}$" in length and may be made from fibre or card.

PLAN OF SWITCH
incl. Data for HO & O Gauges



Not to Scale.

Fig. 7.

HO Gauge 3.5 mm = 1 ft.

Frog	Lead	a	b	c	1	2	3
5	149	62.5	87	111	3.5	5.5	9
6	166.5	67	95.5	124.5	3.5	6	10
7	217	93	129	164.5	3.5	6	9.5
8	238	98	138.5	179.5	3.5	6	10

O Gauge 1/4" = 1 ft.

Frog	Lead	a	b	c	1	2	3
5	10 9/16	4 [illegible]	6 [illegible]	8 7/16	17/64	7/16	7/16
6	12 5/8	5 5/64	7 7/64	9 3/8	17/64	15/32	3/4
7	16 1/8	7 5/64	9 13/16	12 33/64	17/64	15/32	47/64
8	18 1/16	7 15/32	10 7/32	13 41/64	17/64	15/32	3/4

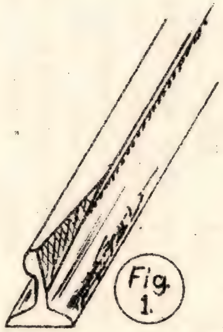
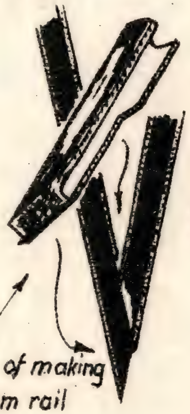


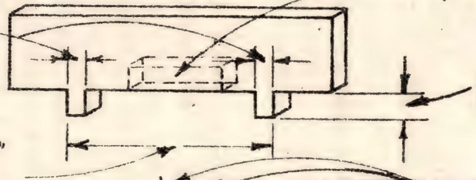
Fig. 1.



Method of making frogs from rail

Fig. 3.

Track Gauge, dimensions for HO, O make from B.M. steel



O = 1.250"
HO - 16.5 mm.

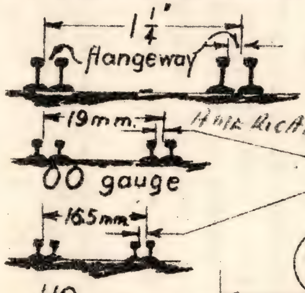


Fig. 2.

5/64" minimum - O gauge

1.25 mm. minimum.

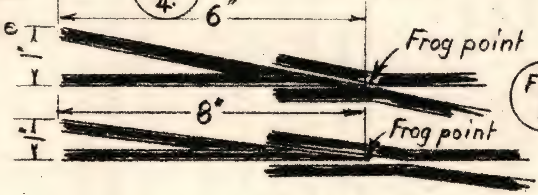


Fig. 4.

Comparison of frog angles

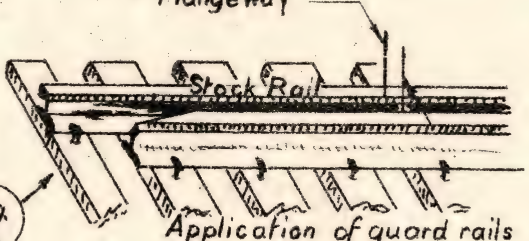


Fig. 5.

Application of guard rails
Minimum flangeway
5/64" - O gauge, 1.25 mm HO (N.M.R.A. stand.)
NMRA "

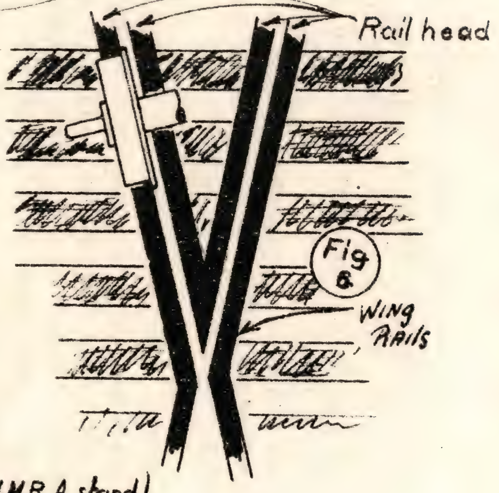


Fig. 6.

After this preamble and a study of the plan we can think about laying some of the respective rails into place, but before actual work commences, it is important to have at least two track gauges for accurately spacing and gauging the rails; the type described earlier is quite suitable. A switch with a No. 6 frog has a lead of $15\frac{5}{8}$" in 'O' and 149 mm in 'HO'. The guard rails are set to a check gauge and the correct clearances are 5/64" in 'O' gauge and 1.25 mm in 'HO'. The use of a micrometer is strongly recommended to make sure that these dimensions are strictly adhered to. The metric measurements can be converted to thousandths of an inch for making the track gauges.

One millimetre equals 0.03937 inches
1.25 mm equals 0.04920 inches
16.5 mm equals 0.64960 inches

Now to work. First we make the frog; it is made in two pieces - the left and right halves. Get a length of rail about 5" long - half that in 'HO' - and cut it in half at an angle which, when both lengths are placed together, will form the angle of the frog required. Make up a template or mark out on paper two lines bisecting one another to give the angle wanted. For example, if a No. 6 frog is required, draw a line, then mark it out into six equal parts; then measure up one part at one end. A line joining these will give you the correct angle, after which you can halve the two pieces of rail to form the angle you need.

I made a mitre box with slots cut through at the required angle, then placed one rail in the box right side up and the other upside down. I then took out the cut pieces, filed the bevelled edges smooth and fitted them together, checking the angle with my template. Incidentally, file away the sharp point of the flange cutting it off at right angles to the web at the point where the web, which is the vertical member of the rail that connects the head and flange, ends. When this has been done tin both faces and solder the pieces together.

Next, we can begin laying the rails according to their position on the plan. Spike down the straight stock rail, leaving out spikes where the point blades and guard rails come into position, then gauge the frog into place, noting the length of the lead from the tip of the point blades to the point of the frog. Then spike it into place. Follow up with the lead rails, which include the wing rails on either side of the frog and are perfectly straight with the sides of the frog. They have their ends bent back or filed to lead the wheels through the frog section. When bending rail at an angle always nick the flange to the web either with a hacksaw blade or file. Then bend it to the required angle, watching that the rail does not twist.

Next the curved stock rail is laid into place and is gauged accurately and straight up to the points of the switch blades and also through the frog. Then guard rails are placed with flangeway clearances of 5/64" in 'O' gauge and 1.25 mm in 'HO'. Lastly the point blades are fitted to line up with the lead rails. The blades have the flanges filed away to the web so as to fit snugly against the stock rails. You can also, if you wish, notch the stock rails to allow the blades to fit much more closely.

The point blades are held together with one or two tie bars, made from flat brass 1/16" or less and $\frac{1}{4}$" wide in 'O' gauge. They are fitted across the ends of the blades and have a hole to take rodding to the point lever or angle crank which will be mounted across the ends of two of the sleepers which are specially extended for the purpose.

ON FOUR-WHEELERS

by Arthur Harrold

Have a look at any layout you like and the chances are that apart from those using Triang, Hornby or Continental ready-made equipment, you will see few, if any, four-wheelers. All passenger stock and ninety per cent of the goods will be eight-wheeled bogie cars, and as for six-wheelers - well, you'll have to go a long way further to see any of those. Now why is this? Why do modellers seem to prefer bogie stock when fixed wheel base four and six-wheelers are used so extensively on many prototype railways? Perhaps to answer this question we should first consider some aspects of the full sized railway and after that see how these conditions apply to the scaled down conditions of the model.

In the British Isles, the four-wheeler with its smaller capacity, varying between about eight and sixteen tons, is widely used because small loads can often best be distributed over short distances in small wagons. In Australia, distances are greater, but in many cases the loads are comparable and so here too there is a considerable demand for small wagons. On the other hand, in the United States, distances are great and loads are heavy, so high capacity bogie wagons are used almost exclusively. It is more economical to load the wagon at the factory with the goods required for the through trip to the town than to have to shunt the wagon and handle the load en route;so if the factory is small, or if the town of destination is small, the wagon is likely to be small, while if the reverse holds, the wagon is likely to be large. In this connection it should be noted that the length of the wagon is roughly proportional to its size or capacity and is one of the factors determining its wheel base and whether four, six or eight wheels are to be used.

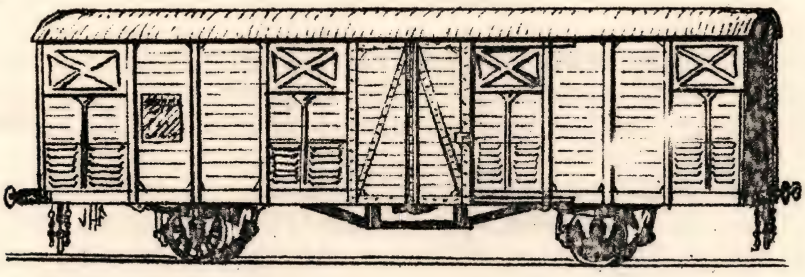
So far, then, we have part of the picture: capacity and demand. If you are modelling branch line practice (like the South Burnett) then by all means carry your timber on bogie wagons on account of the length of the logs but make sure you carry your cattle and pigs and your dairy produce in four-wheelers otherwise you will be drawing only half empty stock. On the other hand if yours is main line operation you can concentrate more on bogie wagons for your inter-city traffic. In any case do what the prototype does. If your layout is modelled on British Railways, then the bulk of your goods rolling stock should be four-wheelers but if your prototype is Yankee, you can stick to bogie stock; if, on the other hand, you are modelling to one of the Australian systems, then remember to give four-wheelers their due because they are most certainly part of the railway scene in all States.

But there is much more to the question than that. We are all aware that some railways use long wheel-base four-wheelers of high capacity and even appear to prefer these to bogie wagons. This is notably so on the Continent where large numbers of four-wheeled passenger coaches also operate. What is the reason for this? Here we are concerned with track standards, for it should be remembered that in Great Britain and on the Continent track is built to a standard rarely seen in this country. It is only necessary to look at photographs of the main lines to realize this. For mile upon mile, even in hilly country, the standard of civil engineering is so high that embankments, cuttings and viaducts carry the tracks at gradients seldom exceeding 1 in 300 and around curves seldom less than 10 chains in radius. Furthermore, heavy section rail is used throughout and track beds are ballasted to a depth of over six feet.

So here is another reason why four-wheelers are used so extensively on certain railways; standards of track construction and maintenance have permitted their maximum use and adaptability. This has an important bearing on model railways because track faults as well as faults in the model are multiplied proportionately to the reduction in scale. To start with, few model railways can afford a minimum scale radius of 10 chains, which equals 18 ft. in '0' gauge and 9 ft. in 'HO'; secondly, a spread in gauge of 1/16" on the prototype may pass unnoticed, but cannot be overlooked on your own layout, while a difference of 1/32" in the alignment between the ends of rails in 'HO' gauge will inevitably make itself felt. It follows then, that if we want to run rolling stock - and four-wheelers in particular - without derailments, we must first make sure that the track is in good order; wide sweeping curves with transitions and generous radii are the ideal, with no dog-legs, no errors of gauge, no misalignments, and no check rail troubles. Gradients, except at their beginning and end points, are not so important, but it is interesting to note in this connection that British Railways have been able to use loose-coupled stock on all goods trains other than those listed for express speeds for so long simply because the tracks are evenly graded.

Next, we must pay some attention to the rolling stock itself. First of all, it is not a bad idea to follow the practice already adopted by a good many modellers of using wheels fitted with over-scale tyres. These unlike off-scale flanges, are not very noticeable, and the extra width of the tread makes all the difference when small errors of gauge occur. Secondly, no four-wheeler should ever leave workshops unless all four wheels stand evenly when the wagon is placed on a sheet of plate glass. This is absolutely essential if the wheels are unsprung. If the wheels are sprung it may be possible to get the desired effect by weighting the wagon so that the pressure of the springs makes up the difference. For this reason many modellers run no fixed wheel-base stock without springing. My own practice is to spring four-wheelers but to leave bogie stock unsprung, which introduces another interesting point. Why, if bogie stock is made up of two fixed wheel-base four-wheeled trucks (i.e. the bogies) does it run satisfactorily without springing when a four-wheeled wagon rides hard?

With bogies, as with any four-wheeled assembly, the plate glass test must of course apply, but as a rule there is no difficulty here because the bogie components generally come in kit form and can be put together with average care. The result is a short wheel-base assembly ranging from a scale 4 ft. in some Australian goods wagons to 9 ft. in British express passenger stock, with its stability preserved because the rest of the coach, supported in part by the other bogie, tends to keep it correctly placed. Model bogies, even when not sprung, are often equalised, which also improves running. Bogie vehicles cost more to build than four-wheelers of similar capacity, but are preferred by prototype railways using only light or cheaply constructed track because four axles can distribute the same weight more evenly than two. If we remember that economies in track laying often go hand in hand with economies in the survey, resulting in sharp curves, and plenty of them, it is easy to see why bogie stock is so popular.



Wheel-bases of Rivarossi models which I have measured come to 15'6" for the gondola and 'G' van and 17'6" for the passenger coach and luggage van. However, according to figures quoted by Ivan Laszlo, Continental railways run four-wheelers with wheel-bases exceeding 27 ft. British Railways have many goods wagons with a 17'6" wheel-base and a few slightly longer. I have a model of a six-wheeled luggage van whose wheel-base is 21'0";a six-wheeler is of course really only a four-wheeler with an intermediate pair of wheels to help with the load. The longer Continental and British vehicles are fitted with long coach springs for running at passenger speeds. The standard British goods underframe has a wheel-base of 9'0", as in the 12-ton open wagon or in some of the covered wagons; 10'0" is also common. In Australia, the V.R. goes up to 15'0" for the T van, which is a refrigerated car; the short T is 10'6", while the GZ gondola is 11'6". Queensland, which has a railway of sharp curves and switchbacks, has four-wheelers whose (fixed) wheel-bases rarely exceed 8'0", although the steel FJS gondola is 10'6". Four-wheelers whose wheel-bases exceed this (i.e. 11'0" and 12'0")have a pivoted arrangement of two-wheeled bogies known as Grover's bogies. These wagons range from 16'0" to 20'0" in length over headstocks and are intermediate in size between the ordinary four-wheelers and the bogie stock.

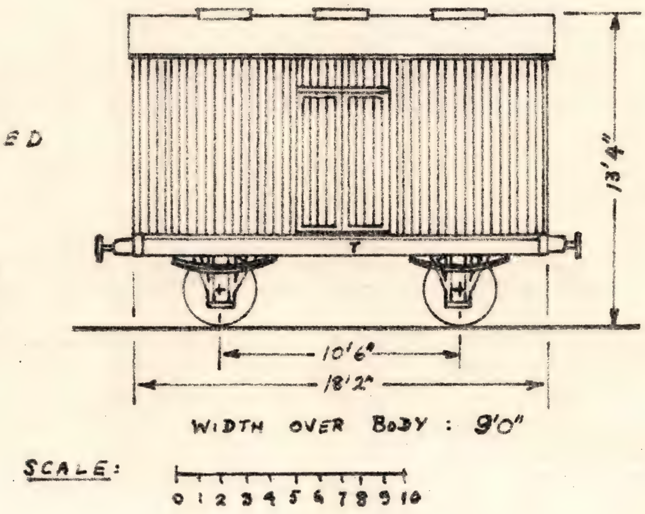
V. R.

INSULATED

VAN

CLASS

"T"



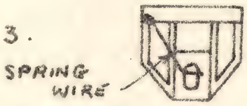
AGK

Anyone reading as far as this will probably now be saying: "Here is someone trying to interest me in building four-wheelers and all he has done so far is to make it seem difficult. No, thanks, I'll stick to bogie stock. I know where I am then"! But is it so difficult? So far, I've only insisted you lay decent track. You can forget the 9 ft. radius curves because they are out of the question anyhow. Most people are agreed that a satisfactory compromise between appearance and function can be achieved in 'HO' with 3 ft. radius curves, and if you increase the gauge slightly on the curves and use wheels with wider than scale tyres you can even operate the longer wagons successfully on this radius.

If you find making the underframe too hard, why not try adapting an existing commercial underframe? Alan Wilson has successfully made a V.R. 'Z' van on a Hornby "Dublo" brake van chassis. You might like to go further and make use of the Peco "Wonderful Wagon" underframes, which are now available separately, both for the 9 ft. and 10 ft. wagons. They may be used without any modification at all for a whole series of loose-coupled British Railways types, and with small modifications to the brake gear for many more with continuous brakes. You could build the smaller 'T' van of the V.R. on a short Peco chassis, and you wouldn't be far out, or you might like to have a go at the little Q.G.R. 'A' van. In both cases the lengths and wheel-bases will be quite close, although the buffer levels will be a little too high. If you want to make up the chassis yourself "S & B" sprung axle guards are easy to assemble, easy to mount and easy to run, although you will find they need weighting.

Also, while we are on the subject, I would like to record here a method of springing rigid axle boxes passed on to me by Stephen Suggit. First of all it is necessary by careful drilling to convert the round hole in each axle box into an oval one in the vertical axis (see Figure 3). A piece of phosphor bronze wire is then soldered to the base of each axle guard so that it presses downwards on to the axle outside the wheel, or, alternatively, four pieces of phosphor bronze strip are attached to the floor of the wagon so as to press lightly on to the axles inside the wheels to produce the same effect.

FIGURE 3.



So there you have it in a nutshell: Lay good track, which is only elementary common sense in any case. Build your four-wheelers so that the wheels sit evenly, springing them if you like, and use wheels with wide treads. Also try and keep to a minimum curve radius of 3 ft. and you can then use even the long four-wheelers successfully. Finally, you will be delighted with the way four-wheelers lend themselves to close coupling without buffer locking.

I am indebted to Ivan Laszlo, Jack McLean and Stephen Suggit who have supplied ideas and material for this article, and to Bill Gardner of "Pacemaker" who very kindly lent me models out of stock so that I could check their measurements.

BUILDING THE N.S.W.G.R. "K" & "U" WAGONS

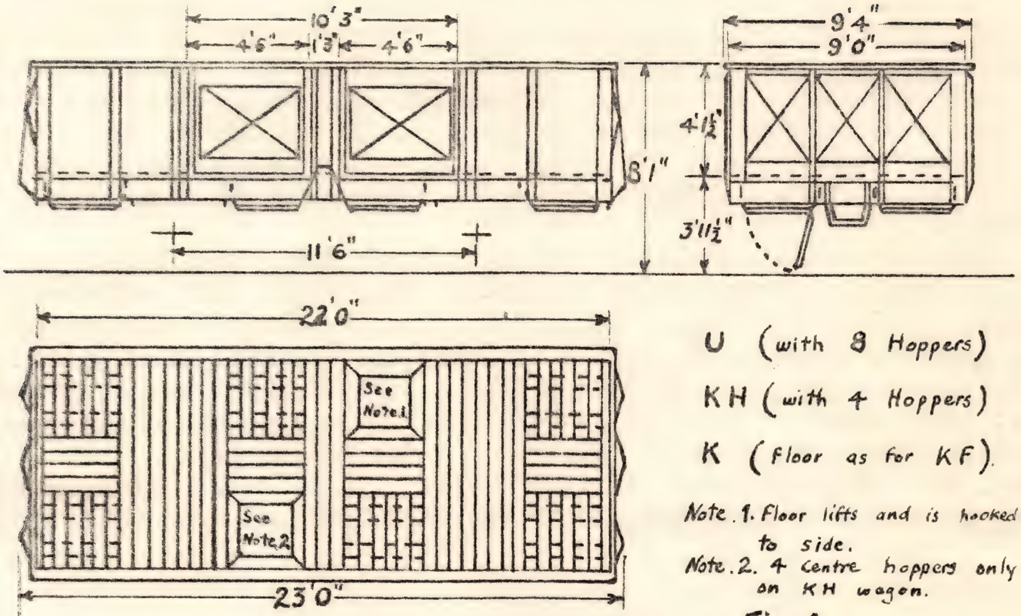
by KEITH CUTLER

The N.S.W. flat wagon 'KF', open wagons 'K', 'KH' and 'U', and bulk wheat wagon 'RU', are four wheelers, having the same general dimensions. They are of steel construction with wooden floors, are auto-coupled and are without buffers. The inside measurements are 22'0" by 9'0" for the floor and 4'1½" for the depth of the sides. The open wagons have two 4'6" side opening doors on either side, with a removable centrepiece of 1'3", making a total door space of 10'3" (see Fig. 1). All are mounted on 10" x 3½" channel underframes, the construction of which is entirely different from other types of wagons (see Fig. 2). The 'KH', 'U' and 'RU' have 3' x 3' discharge hoppers in the floor. The 'RU' is fitted with a steel top, with four hatches for loading purposes. The ends and the side doors are dished out 5 inches.

In the construction to 7 mm scale I used BPR structural sections where channel or angle was required. Let me point out here that the 5/16" channel used for the sole bars is a little over scale for those who require scale height, 7/32" channel being better, if available. For the underframe, take two pieces of 5/16" channel, 154 mm long, for the sole bars and two pieces 63 mm long for the head stocks. With the channel sections facing inwards, file off the corners to an angle of 45 degrees, and solder the sole bars and head stocks neatly together, making sure that construction is square in every way. The two long centre channel pieces may be added at this stage if desired. Next cut four pieces of ⅛" channel 28 mm long, and solder two of them across each end, neatly in line with the head stocks, leaving a gap of 7 mm in the middle (Fig. 2). The coupling fits partly into this space. Now file the outer ends to an angle approximately the width of the sole bars (see Fig. 1 - end view).

For the wheel mountings, measure 40¼ mm each way from the centre of each sole bar, then 10½ mm each way from each of these marks. There are two types of wheel mounting. Type one (Fig. 2): cut four pieces of ⅛" channel, 63 mm long, and solder them across the under side of the frame at the points marked, the space between each pair being 21 mm. Now measure 9¼ mm along each of these pieces from each side, cut four pieces of 5/16" channel 28 mm long, and with the channels facing the sole bars solder them to the tops of the cross pieces, the backs being at the points marked (Fig. 2). The axle guards are mounted on these. Finish off the ends of the cross pieces with a file. Type two (Fig. 2) : cut eight pieces of 5/16" channel to fit between the sole bars and solder them into place with a 21 mm space between the backs of each pair. Now cut four pieces, 21 mm long, and solder them into position for mounting the axle guards (Fig. 2). The springs are of the heavy type with 13 leaves,differing from the other type with 9 leaves seen on other wagons.

N.S.W.G.R. WAGONS.



U (with 8 Hoppers)

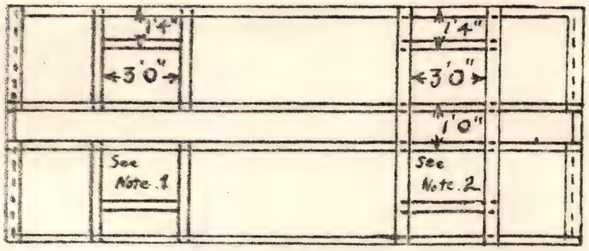
KH (with 4 Hoppers)

K (Floor as for KF).

Note. 1. Floor lifts and is hooked to side.

Note. 2. 4 centre hoppers only on KH wagon.

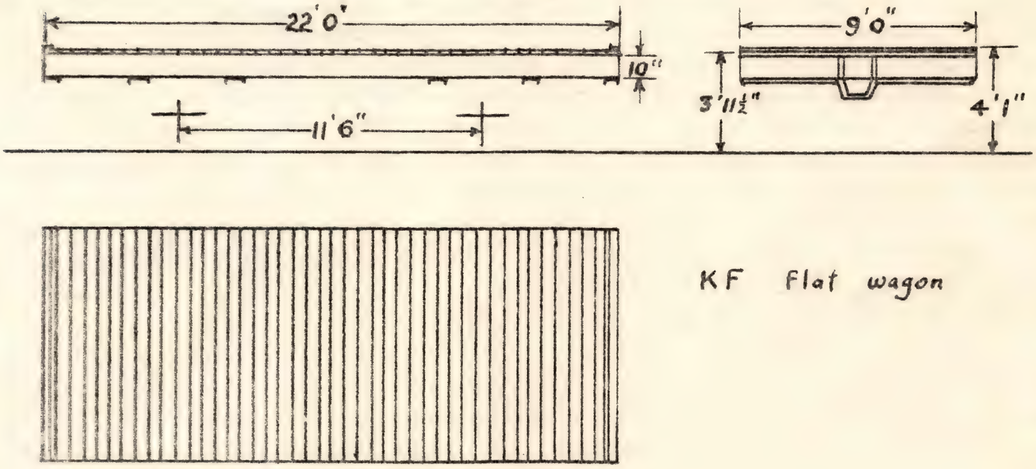
Fig. 1.



Note. 1. Type Two wheel mounting arrangement.

Note. 2. Type One wheel mounting arrangement.

Details of underframe (from below). Fig. 2



KF Flat wagon

Scale 3·5mm = 1.ft.

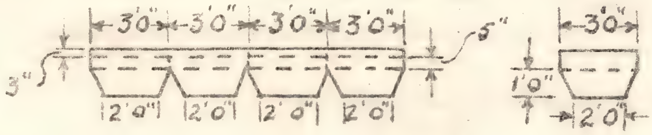
Fig. 3.

JT 7.1.'6

To this frame you may glue a 154 mm x 63 mm wooden floor and attach a 1/32" x 1/16" strip of wood at either end; this will give you the 'KF' flat wagon (see Fig. 3).

To construct the open wagons, but two pieces of tin plate, 63 mm x 31½ mm, for the ends. Mark out details, then cut out the portions to be dished outwards. To do this, make one bend in a vice, and the other using pliers;bend the top portion to straight and then solder the completed portions in again. Now solder each end to the underframe, allowing for inside height plus depth of floor. Next cut the angles to shape (see Fig. 1 - side elevation) and solder them into position, facing outwards.

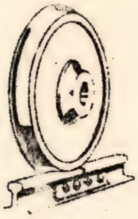
For the sides, cut four pieces of tin plate, 40½ mm x 35 mm, and solder them to the underframe and ends. Then from 1/16" angle cut eight pieces, each 35 mm long. Solder one piece, angle inwards, along the edge nearest to the door opening of each piece of tin plate and another midway between it and the corner piece, again facing the angle inwards (Fig. 1). Now make four pieces of angle 3½ mm x 3½ mm to fit over each corner. To make the centre pieces cut two pieces of tin plate 36 mm x 8¾ mm, and cut four pieces of 1/16" angle, 35 mm long; solder one piece along each edge of this strip with the angle facing outwards, then cut away 5½ mm from the bottom between the angles. Next, cut two small pieces of tin plate, 8 mm x 3½ mm; cut off 2 mm along the top and solder them across the angle pieces 5½ mm from the bottom. Solder the completed piece to the middle of the door space on each side, then cut a strip 3 mm wide and fold it to fit over the angle pieces,soldering 2 mm to the sole bar, each side of the angle, and between the angles.



Scale 3·5mm = 1 ft Diagram of Hoppers Fig. 4 JT 7·1·61

To make the doors cut four pieces, 31½ mm x 31½ mm, mark out the portions to be dished out, 2 mm from each side and 5½ mm from top and bottom. As before make the first bend in the vice and the second with pliers; straighten the portion around that dished out in the vice and solder it into place. Using 1/32" strip, make hinges and door fastenings and fit the doors into place. Solder a length of millimetre wire around the top, leaving a slight gap at each door edge. Fit the floor for the type of wagon being constructed.

To make the hoppers, cut four or eight strips, 84 mm x 11¾ mm, and mark off into 21 mm sections. Now mark off 1¾ mm, 3 mm and 7 mm sections as shown in figure 4. Cut out the top portion and fold it outwards but fold the remainder inwards and then solder it all up. Make up covers large enough to overlap the bottom of each hopper slightly(see Fig. 1), and solder them into place, then glue the hoppers to the under side of the floor.



From "Journal", Vol. 2,
No. 1, February, 1952

STUD CONTACT
(or Invisible Third Rail)

by Ern Mainka.

The purpose of this article is to trace the history of the "stud contact" or "hob-nail third" method of current collection. As far as I can find out, it appears that the first use of stud contact on a model railway can be attributed to Alan Goode, Victoria, in 1937, the idea being suggested to him by another well-known modeller, Alan Shorter. Alan Goode experimented with the idea and finally brought it to perfection as we know it today.

Now if we go back to 1938 and over to England, we find Mr. Ernest Carter working on the same idea and in 1939 he gives just a germ of the idea in his publication "Electric Model Railways". Over the War years, stud contact apparently caught on in England, and after the War, when book publishing got going again, we find it mentioned in the following books:-

1948 "The Model Railway Hobby" by M.H. Binstead.
1949 "Stud Contact Electrification" by Mr. E. Carter
"Garden Railways" by Mr. R.E. Tustin.

Also, there has been a good deal of discussion on it in the English monthly publications, and we find that in England, stud contact is being more widely used as time goes on.

Now to consider the situation as it is in the States. To my mind, the Yanks must have all their dollars tied up in two-rail equipment for we find only a brief mention in an editorial in the Model Railroader and by now they have forgotten all about it. However, that doesn't worry us; some day they will wake up and claim it as an American invention, and that is one of the reasons why I am setting down these facts now. Possibly one reason why stud contact wouldn't catch on in the States is the fact that the 'HO' gaugers are in a great majority there, and stud contact apparently would not be suitable for HO.

Returning to Australia, at the present time I would hazard a guess that at least half the 'O' gaugers in Victoria use stud contact; (by 'O' gaugers I mean scale modellers, not tinplaters). Practically all 'O' gauge members of the Victorian Model Railway Society use it, and Alan Goode's layout of about 1200 ft. of track uses this system. I cannot speak for other States, but the N.S.W.G.R. Show exhibit uses stud contact.

I do not want to enter into any argument about the respective pros and cons of two-rail as compared with stud contact. Sufficient to say that stud contact has proved itself, and users of it are well satisfied. If you are a newcomer to the hobby, study the book "Stud Contact Electrification", try and see a layout operating with the "hob-nail third", and shortly the A.M.R.A. will be publishing Standard dimensions for both 1¼" and 16.5 mm gauges, for the guidance of those who intend to use stud contact.

STAFF AND TICKET

by Jack Makin

By far the greatest mileage of the Australian railways is single-tracked, traffic being insufficient to warrant the expense of double-tracking. This is in direct contrast to the state of affairs in Britain where single-track lines are a rarity and almost all main lines are either double- or multiple-tracked, and have been from the beginning. Yet it was in Britain that the method of single-track safe-working, which I am about to describe, originated.

On double lines, the principal risk is that of the "rear-end" collision, caused by fast trains overtaking slow ones, or moving trains colliding with standing trains. But on single lines there is added to this risk, the much more serious one of the head-on collision. It is therefore of prime importance that a system by employed which absolutely prevents the movement of two trains on to the same section of single track from opposite ends.

On all but the simplest "one train" lines, it is necessary to provide loop lines at intervals along the track on which trains may stand while others, moving in the opposite direction pass them. Such loop lines are most conveniently sited at stations. The distance between them is dictated by the density of traffic, and they serve to divide the main line into a number of sections or "blocks".

It might be thought that, given a reliable system of communication between signals staff, the movement of trains from block to block could be arranged by mutual agreement, or by verbal order from a central control. So it can, but experience has proved time and again that such a system is not proof against human frailty, and many serious accidents have been caused by misunderstanding, sickness, or pure "cussedness" As a result, various systems of safe working have been devised, most of which depend on the possession of a recognizable token or "staff", which is the driver's authority to proceed into the next section.

There is one staff, and one only, for each section into which the line is divided. In the simplest form of working it is handed to the driver at one end of the section and delivered up at the other end. Since there is only one staff, there can be only one train in the section at a time.

Such a system, however, requires a regular alternate up and down movement of trains. A train from A to B must be followed by a train from B to A, and so on. The demands of traffic, however, do not permit the practical working of such a system. It is frequently necessary for two or more trains to pass from A to B in succession without intervening trains passing from B to A. To cope with this situation, the staff and ticket system was devised.

To follow the working of this system let us suppose that two trains "AB1" and "AB2" are required to move from A to B, and that AB2 is to meet and cross a third train, BA1 at B. Each of the two stations will have a box, called the staff-box, which is identified with the AB section. These boxes are oblong in shape, with hinged lids and locks, and may be painted in the distinguishing colour of the section. Inside each box is a book of printed forms. The key to the two boxes is the staff itself, which consists of a wooden shaft about 15 inches long and $1\frac{1}{2}$ inches thick, bound with brass tubing, and terminating at one end in a round, flat head. On each side of the head is a brass plate, bearing the names of the stations between which it is worked. One side says "A to B", the other "B to A". The staff is inserted into a specially shaped hole at one end of the box, and two steel projections along the shaft serve as wards, to release the lock when the staff is turned. No other staff will unlock these boxes, and their staff will not unlock any others.

In the case we are following, the staff will be at station A. On arrival of train AB1 the station master or signalman will unlock the relevant staff-box, take out the book of forms, and write an order authorising train AB1 to proceed from A to B. He will then replace the book, relock the box, and hand the order to the driver, at the same time displaying the staff as proof of his authority. The driver, having examined the staff and satisfied himself as to its identity, will proceed to B. When train AB2 arrives however, the officer will hand the staff itself to the driver, who will carry it to B where it will be used to authorise the movement of train BA1 from B to A.

Suppose, however, that train AB2 is seriously delayed, and has not yet reached A when BA1 is ready to leave B. The problem then arises, whether to delay BA1 until AB2 arrives with the staff, or whether to send it on to A without staff. To cope with such a situation a procedure has been devised, known as getting and issuing a "line clear". Each station master sends a signed telegram to the train control office. B asks for permission to send train BA1 from B to A without staff, A assures control that the AB staff is "locked up", i.e. held in safe keeping, not to be issued to any train until BA1 arrives at A. Permission being granted, A sends a signed telegram to B, informing him that the staff is locked up and the line clear. B countersigns this telegram and hands it to the driver as authority to proceed into the AB section and so complete the crossing movement at A instead of B.

The above may seem to be a very complicated procedure and one calculated to cause additional delays, but experience has proved its value in the protection of life and property.

A variation of the staff and ticket system is the "divided staff". In this case, the staff is made in several sections which can be taken apart and re-assembled. Each train of a group is given a section of the staff, the remainder being displayed at the same time. The last train carries whatever is left, allowing the staff to be re-assembled at the other end of the block.

The application of either of the above systems to model railway working could do much to increase the interest, and I hope at some future date, to outline a simple system.

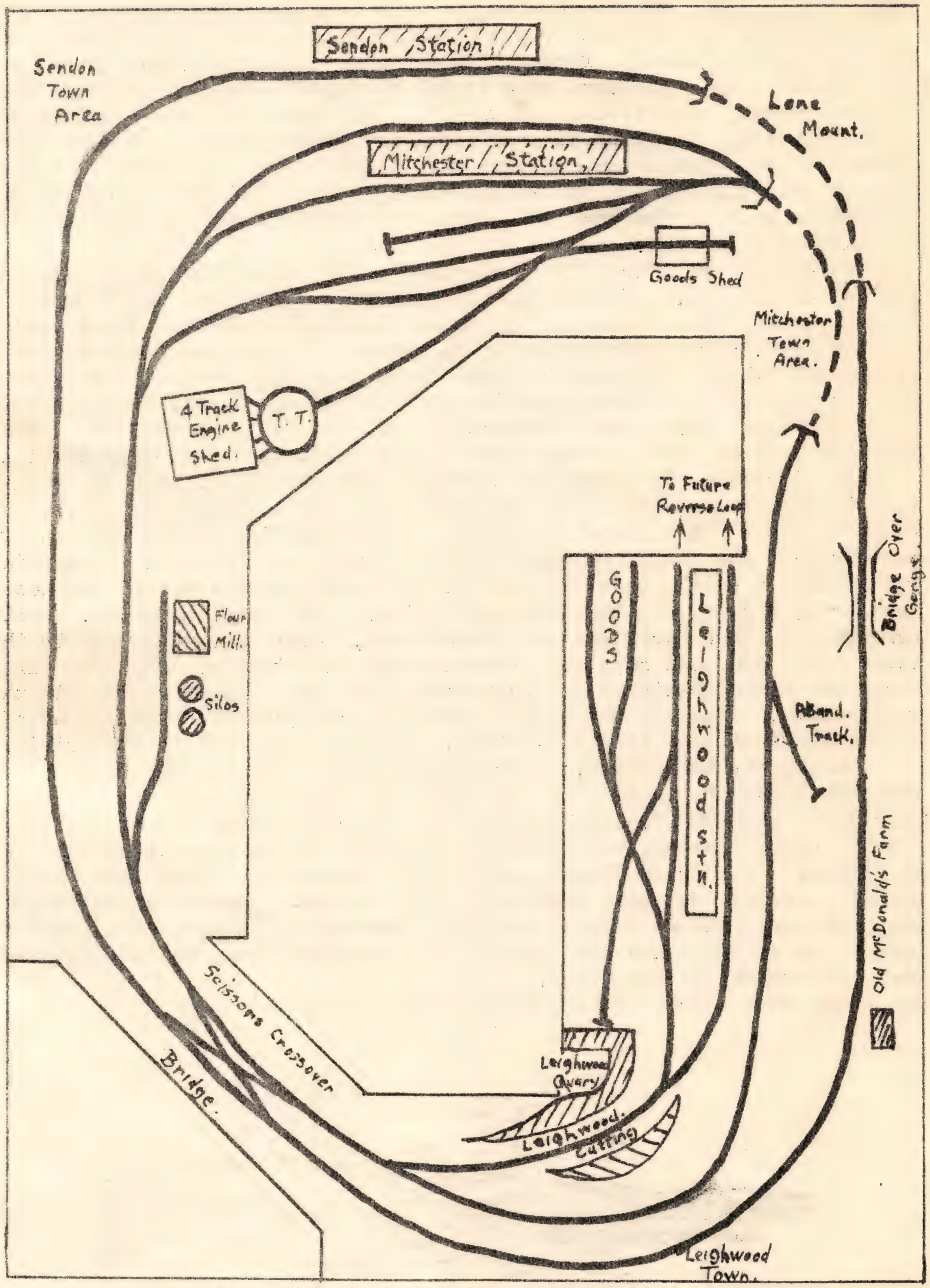
REX NORMAN'S "LONE MOUNTAIN" RAILWAY

In the March 1960 MODEL RAILROADER there was a description of a scheme worked out by the Southern Tier Model Railroad Club in America, where its members' model railroads are connected (in imagination of course), and their cars and passenger trains regularly connect with other trains on neighbouring lines. A beginning has been made at Beechworth with a similar scheme where the three systems interconnect, Rex Norman's "Lone Mountain" Railway forming a link between Lou Joslin's "Dookie, Darrawiet & Tintaldra", and Geoff Barnes' "Bluegum & Wattlebark" Railway.

We enter the LONE MOUNTAIN Railway via a reverse loop under the original baseboard, and find ourselves at Leighwood. This is a through station, and is still under construction. Only the water tank and goods shed have so far been built, but all the tracks are laid, and quite a lot of earth moving equipment is busy cleaning up the yards. We see bulldozers,tournapulls, front-end loaders, steam and motor rollers working to clean up and level the ground. Our train, consisting of four main line corridor carriages and an ex-NSWGR brake van, is pulled by 4-6-2 "Duchess of Atholl".

On leaving Leighwood Station, we proceed through Leighwood cutting which runs past the quarry to a lift bridge. This is famous because it has a scissors crossing fair in the middle of it. We take the left hand crossover, and climb the Sendon bank past the front of the town and into Sendon Halt. The Sendon Station building is an elaborate brick structure with a two story house built on it for the Station Master. This was once a very busy spot, but times have passed it by and road transport has taken over most of the traffic. As a result, the Railway Company has sold all surplus land and pulled up all but the main line. Now the S.M. just sits in the sun and dreams of what it used to be.

Leaving Sendon, we enter a tunnel through the lone Mountain, a strange phenomenon which rises from flat ground exactly where the railways wanted to go. Emerging from the tunnel, we start to drop, crossing Gutteridge's Gorge on a plate girder bridge and on down past "Old McDon-



LONE MOUNTAIN RAILWAY (Not to scale)

M.McK.

ald's Farm" into the back of Leighwood Township, over the level crossing, past houses, shops and the Church, and coast on the lift bridge again.

This time we take the right hand crossing off the bridge, and shortly after we see the factory spur, then the factory itself with its silo at the side. We have been trying for years to find out what that factory makes, but we don't know yet. We have seen four wheelers and bogie box cars, loads of timber, coal and cattle wagons, hopper cars, petrol wagons, sheep vans, and even well-wagons pulled in there at times, and the only sign we can see is "57 VARIETIES". Immediately behind the factory we pass to the back of a four track engine shed, built in stone and with a round roof.

Before we are aware of it, we have pulled into Mitchester, the main station of the run. Mitchester has an island platform to allow locos to run around their train, but passenger trains take the track behind the platform, and goods run past the front. The reason for this is a very masty S-bend right at the end of the platform which threw some of our distinguished visitors, including members of the Murray Valley Branch of the AMRA off their seats when relief driver Dick Gutteridge roared into the station half a minute late at the controls of the AMRA Special.

At Mitchester we leave our train, which later will make the return trip to Leighwood, and board another. Instead of long main line cars, we change to shorter branch vehicles. While waiting at the station, we see our main line train disappear into a tunnel in the hill. The points at the throat of the yard are thrown, and our previous train reappears backwards, shunts into the carriage siding. The loco uncouples, pulls forward and then backs past the goods shed, over the point work to the water crane and coal supply. It replenishes its tender, drops its fire, backs on to the turntable and then moves into its respective road in the engine shed. Also in the shed we see a black Pacific "Princess Loco", a Great North of Scotland 4-4-0 type, and 0-6-0 tank of Italian origin.

During our inspection, a train has pulled into the platform and we find the 4-4-0 at the head of two bogie box vans, two 49 ft. corridor coaches, an ex NSWGR F.O. coach and a 36 ft. bogie brake van at the rear. Driver Llew Joslin gives a couple of blasts on the whistle as we board the train. The green flag is given and we pull out into the second tunnel through the Lone Mountain. This is more than twice as long as the first one and we emerge right at the head of Gutteridge's Gorge to pass by a set of points that lead to an abandoned line, and so pass back on to the tracks of the D.D.T.

Extracted from "Border Bull", Vol.2, No.3, 1960.

A NARROW GAUGE SUGGESTION

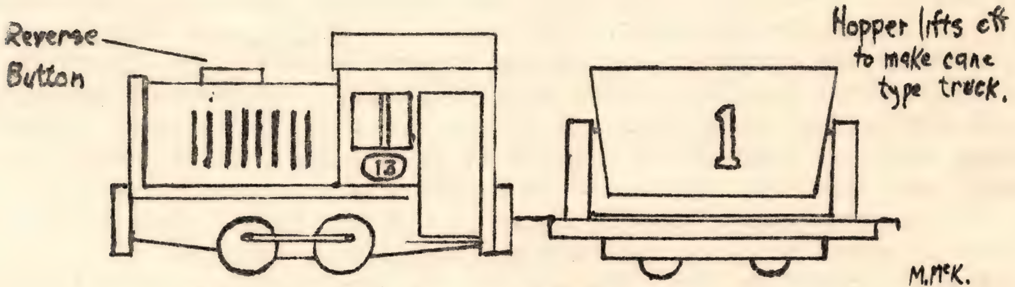
BY DICK GUTTERIDGE

When the "Crooked Creek" Railway was in Melbourne, Rick Richardson would sometimes come over; he would take no interest in the standard gauge "scale" part of the line but would always play with the Biller tram on the Mt. Walhalla Timber and Railway Coy. Now, once again, the C.C.R. has a narrow gauge quarry feeder line which joins it at Haunted Hills.

This quarry railway is of German manufacture, made by the firm of Biller, and is available from the Meadmore Model Engineering Coy. in Exhibition Street, Melbourne. It is clockwork, to 16.5 mm gauge and about 7 or 8 mm to the foot scale, and has an 0-4-0 diesel, steam locos, dump trucks, points, wagon turntables and track.

The diesel is the better looking loco, runs very slowly and has a very handy reverse mechanism operated by pressure on the exhaust fan housing on the top of the motor. I have two of these locos and have a small quarry layout in 3 ft. x 2 ft.

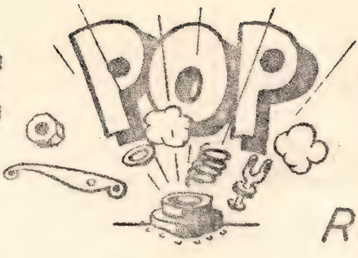
If the body is removed from the dump truck there remains a vehicle very similar to a cane truck with two uprights on a skeleton body, and withal to a scale of 'On 2½', as near as makes no difference.


Reverse Button
Hopper lifts off to make cane type truck.
13
1
M.McK.

Biller Deisel Loco + Dump Truck.

……

A photograph recently received shows Harry Harley beside the 3½" gauge (1" - 1'0" scale) live steam model of the old Q.G.R. B13 (2-6-0) locomotive that he built recently. According to reports the locomotive performs well and there is no doubt that its appearance and finish are fully in keeping with Harry's high standards of workmanship.



THE POP VALVE! FOR READER'S LETTERS

To the Editor:

May I through your columns thank the Federal Committee of AMRA for the recent opportunity to distribute a specimen copy of the "Booster" to each member with the "Buyers' Guide"? A letter to the Federal Secretary produced a prompt reply saying that the Committee had approved of my request, so arrangements were made to send sufficient copies to Bob Smith for distribution.

Two reasons prompted my request. First, we are quite proud of our magazine; with its original style we find that it appeals to the members of NMRA and I hope that AMRA members will like it also. The issue distributed was perhaps not as wide in its coverage as usual as it did not have any loco plans or layout designs, but that was due to a fact with which you yourself are quite familiar: we did not have any to publish. But more are promised in future issues. The format is, in my opinion, not as good as the Journal which is usually neat and very attractive and you are to be congratulated upon your production. Perhaps only I, as a member of AMRA as well as NMRA, can realise how hard you must work to produce it.

Secondly let me assure you that the "Booster" was not sent to the members in order to increase NMRA membership. I have found over the past ten years of modelling that persons join an organisation by reason of personal contact rather than by advertising. One makes friends and joins their clubs or associations because one likes them. Here is my reason; a magazine such as the "Booster" costs money to produce. At present, more than comes in as dues. You, as an editor, know that the basic costs of production are the stencils, page headings, photostencils and, if it has to be paid for, the typing of roughs and the final stencils, whether one produces one or one hundred copies. The extra ink and paper for another hundred copies is very small. We produce roughly one hundred copies per issue and are in the red - mainly because I want the magazine to be as good and as big as it is. I want the magazine to have another one hundred readers - subscribers - and we will be out of the red. If then we show a profit I can plough it back again with more pictures or pages or plans or what you will.

Please accept my best wishes for the coming year and I hope that members will inundate you with manuscripts for the Journal.

30/11/60 Tim Moss, 189 Homer St., Earlwood, N.S.W.

(Editor, The "Booster", the Journal of the Southern Cross Region of the National Model Railroad Association).

So do I, Tim. Just to remind you, Readers, the "Booster" is available on annual subscription for fifteen shillings, post free. For this you receive six copies - one every two months - of excellent reading matter. I take it myself, so I know. Editor

To the Editor:

Due to the kindness of my friend and fellow-enthusiast, Jack McLean, I have been able to read recently four copies of your magazine, which I much enjoyed because of its wide range in both model and full size railways, its fresh outlook, its excellent engine and rolling stock diagrams and the very fine manner in which the whole is presented.

On Page 31 of the issue for August 1960 I saw some reference to records of engine and train sounds, and noted that no information was available on the English records, so I now take the liberty of enclosing a list of Transacord records I have heard and also two very fine records from New Zealand, one of which, "Power for the Grade", is a really fine piece of work. It was made in the North Island by Dawson Wilkinson and the booklet was written by D. Mellor. I have heard many English, Australian and American records but none of them can come near the quality of "Power for the Grade". It has everything and then some; it was made mostly at night and some of the bands include some fine "off-line" sounds, which add to the interest of the whole.

Turning again to the "Journal", I note you have trouble with certain of the writers to "Pop Valve" who will forget that there are others who like to read of things they do not and also that such a magazine as yours is turned out by men who are paid not one penny for their time and effort.

2/12/60 Leslie Poole, East Malvern, Vic.

Leslie Poole's list of Transacord records, as well as information as to where the English, New Zealand and American recordings can be Obtained will be found in the Buyers' Guide (February edition).

Editor.

To the Editor:

I have just been reading your account in "Journal" on the QGR timber wagons, and note your mention of Grover's bogies, which interests me greatly.

I came upon this bogie first in Tasmania and then in my visit to Queensland, but could not find anyone who could tell me -(1) Who was Mr. Grover (2) How does the bogie restore itself to the normal straight position? If you can supply the answers, I would be very grateful to have the information.

5/12/60 Leslie Poole, East Malvern, Vic.

To the Editor:

I cannot agree with Rick Richardson that the number of hand builders in the AMRA has declined, but I feel that they are a much smaller proportion than was formerly the case.

The fact that a member can get a layout running very quickly is a cause for rejoicing in my opinion, for many would-be modellers grew discouraged during the War and immediate post-war years. I still build practically everything except locos myself since in spite of all trends, I am still obstinately an 'O' gauger and have no desire to change, except perhaps to a garden railway 15" gauge!

The solution to Rick's problem is to find a few members of similar viewpoint and arrange an informal meeting at odd times at members' homes - in other words to repeat the fun of the early years of AMRA, when every member knew almost every other by name, by forming a small group of hand builders WITHIN THE AMRA. Not a rival group but a small circle of like minds.

The Murray Valley Branch to which I have the pleasure to belong, is just such a group of like minds. We meet three monthly, but members come eighty to a hundred miles to meetings, to natter, compare models and run trains.

Perhaps this idea could be extended to form groups in various suburbs of Melbourne and Sydney for members who find it hard to get to State Branch meetings or for members who would like to run trains on other members' layouts.

14/11/60 Dick Gutteridge, Yarrawonga, Vic.

To the Editor:

Most members will, I am sure, have remarked upon the fact that the November issue of the "Journal" was fastened with only one staple instead of the usual three. A few members will have guessed at the probable reason for this lack of fastening, having had some experience with the preparation of "Journals" in the past, but the majority of members were probably tempted to make some terse remark concerning the lack of energy of the present collating staff. It is to these members that I wish to address this little note. Two things which enter the lives of most of us, even the members of the publishing staff, combined to make the job of collating this issue of "Journal" a most difficult task. Two things - sickness and pre-Christmas commitments.

As Bob Smith, the usual collator, was on the sick list, emergency measures had to be introduced so that "Journal" could reach all members in time for Christmas. Accordingly, Tim Dunlop and Alan Wilson collated and "single-stapled" three hundred copies of "Journal" in one evening. That is no mean feat, as I know, for I have collated "Journal" many times, but never with less than three assistants. To top this off, Tim stayed on the job until 3 a.m., placing the copies into the envelopes so that the whole lot could go to the post on the last Saturday morning before the Christmas week-end. Even the job of talking the post office staff into taking delivery of 260 bulky "Printed Matter Only" envelopes on a Saturday morning must have been a formidable one. "I dips me lid" to Tim and Alan!

20/12/60 Maurie McKinnon, East Bentleigh, Vic.

Yes, and it must be remembered that before attacking the job of collating the finished "Journal" Tim had already spent hours sticking in the artwork, drawing in the headings, organising the typing of the stencils and the production of the art stencils, then printing over thirteen hundred pages of material. Editor.

To the Editor:

I have had unenviable experiences with four Japanese loco kits, although admittedly none of them were Tenshodo. I have also had experience with some Japanese motors made by the same firm as the ones supplied to Tenshodo. I am not biased against items made in Japan, but I do object to being cheated and misled. In all the kits there was something missing. In one it was a coupling rod; in another the bogie wheels were not insulated. Of the eleven Japanese motors I used four came factory fresh with bent shafts. They were a complete loss and I could not get them replaced. One came with a brush holder made as a zinc stamping and on soldering a lead to it it crystallized and broke. I never secured a replacement for it, and it too was a total loss. Also none of the Japanese made bogies, trailing and leading wheels ever tracked, and I use good proprietary track of European make, all strictly to gauge and some of it outright scale.

From other points of view too the locos I dealt with were unsatisfactory, often shorting against frames or against cylinders. There is no service that I know of, where a new part is provided for a defective one, with Japanese locomotives, so I no longer buy Japanese stuff. I fully agree with Ern Raddatz and this is one of the reasons why I went Continental. I can get an 0-8-0T with complete valve gear from an outstanding manufacturer for less money than the Baldwin tank of Tenshodo costs; I get better motors, and I get service.

Well, these are some points which I am quite prepared to substantiate at any time. I repeat, I am not prejudiced, but if I spend money I want something for it.

22/12/60. Ivan Laszlo, South Tamworth, N.S.W.

Opinions expressed by correspondents in this column are those of the writers themselves and are not necessarily those of the A.M.R.A.
Editor.

Bob Inkster writes:

A remarkable phenomenon at the present time over here is a gradual but apparently irresistible revival of 1-Gauge, 10mm to the foot. I see it as a revolt against the increasing "toy" influence in the smaller scales, and personally I'm all for it. I am myself only a moderate modeller but I like to get my teeth into a bit of engineering. Of course the main attraction is probably the idea of decent live steam haulage. Anyway, I'm going to have a bash at this 1-Gauge lark; one of my Christmas presents from my wife was a very fine 12-inch long rule graduated in feet and inches in 1-Gauge!

28/12/60 Manchester, England.

Jack Makin writes:

Rick Richardson's complaint about the decline in the urge and ability to "make it yourself" touches a sympathetic chord in my own heart. From the beginning I have been compelled either by lack of supplies or funds - or both - to attempt the construction of most of my railway components. Although I hesitate to compare the results of my efforts with Rick's, they still give me much satisfaction. By the state of the '0' Gauge Market I should say that I'll be making my own for quite a while yet.

30/10/60 Columboola, Queensland.

To the Editor:

Re articles for the Journal. I may not be the best of journalists but I'll certainly have a bash at story writing. I see that in the December 1960 "Buyers' Guide" it is requested that we write to you to see just what is required for the Journal. Well, just what is required?

6/1/61. Roger Hannaker, Newport, Vic.

DIGGER'S REST - 1898

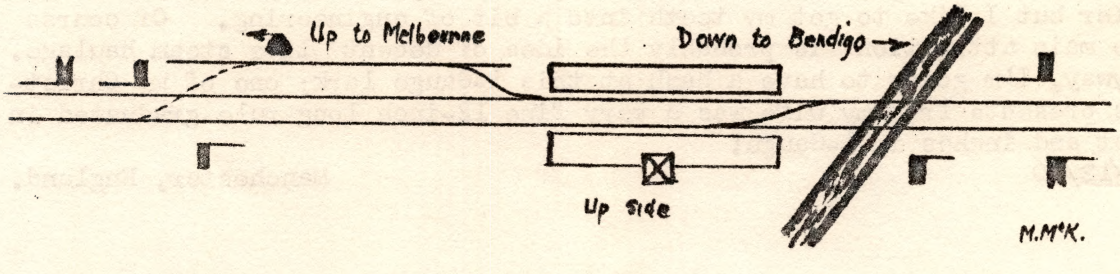
Jack McLean.

Digger's Rest is only a small place even now; a few shops on the Calder Highway, and gates across the railway. Over sixty years back it could scarcely have been very different, but somehow it justified a local passenger train. Now there may appear to be nothing startling about that except that Digger's Rest had only one crossover. The arrangement which is shown in the figure is a good guess at the facilities there; the dotted crossover appears to have been acquired later.

The method of terminating trains there is as described in the 1898 General Appendix:

"On the 8.55 p.m. Down train arriving at Digger's Rest platform, the engine must be crossed to the up side and the train tail-roped clear of the crossover, when the engine must be attached and the train hauled to the Up platform whence it will start for Melbourne at 9.55 a.m."

What appeals to me about the place at this time is not only the frugal "run round" facility, which even so is better than that found on some model lines, but the fact that the arrival, run round and departure were at the most allowed ten minutes, possibly only five, giving further justification for some of my own 90 m.p.h. shunting!



BRANCH REPORTS.

On 10th December the Branch held its annual Christmas party and model making competition in association with the "Historicals" who organised the competitions for the photographic classes. Quite a large crowd gathered, amongst whom we were pleased to welcome Mr. Castley, the Chief Mechanical Engineer of the Queensland Railways, John Jeffcoate and Mr. Frank McKennariey, who kindly acted as judges.

Ken Innes, ably assisted by his wife who looked after the cakes and sandwiches, thoughtfully broached the keg early so that members circlated well in search of their friends and both beer and conversation flowed freely. A good selection of QGR models were to be seen running on the Branch layout, including an eleven car "Sunlander", and members were also able to view the static models sent in for judging and the photographic display.

The Fenner Shield, awarded to the best piece of rolling stock went this year to Llew Van Fleet for his Union Pacific 'O' Gauge Gas turbine locomotive. Other rolling stock prizes went to Ron Long for his American coaches in 'HO' and Eddie Hancox for his American freight cars. Stephen Suggit won the "linesider's" award for his 3/16" scale model of his own seaside cottage. Also on display, but not entered for competition, was Garth May's beautiful cap stacked QGR A12 4-4-0 locomotive in 3/16" scale.

In the photographic section (black and white) Garth was the winner with a shot of coal trains at Dinmore, while stephen Suggit followed with a PB15 at Woolloongabba, and in the colour slides section Keith McDonald won with a beautiful shot of a diesel hauled NSW passenger train emerging from the Hawkesbury Bridge.

MURRAY VALLEY

The June meeting was held at the home of John Kerr at Ky Valley where the Echo Valley Railway (see "Journal", February 1960) really had a workout. Fifteen members were present, having travelled from Beechworth (80 miles), Yarrawonga (70 miles), Bendigo and Harcourt (80 odd miles). The Echo Valley is point to point with two terminals and a continuous run and John exploded the old myth that everything goes wrong when visitors come, because on this occasion running was faultless, the only troubles being due to ham-fisted operators and an occasional close clearance by some of the larger visiting locos. All present talked and ran trains to their hearts' content and quite obviously enjoyed themselves and did full justice to Mrs. Kerr's magnificent afternoon tea.

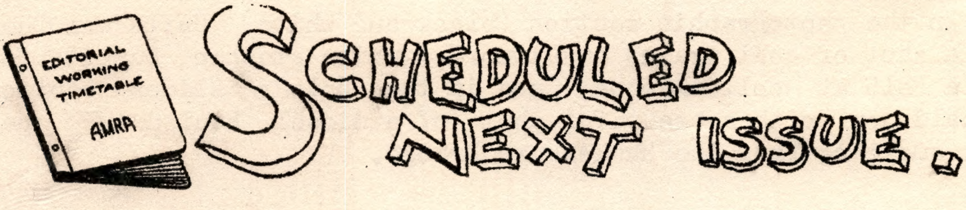
The September meeting was held at Geoff Barnes' home at Beechworth, with seven members present. Geoff's layout, the "Bluegum & Wattlebark", is set around the walls of a 12' x 12' room, with the main station (Bluegum) set on a 4' x 12' board all along one side. A notable feature in the loco depot is the Marklin turntable which has been two-railed by replacing the Marklin track with Fleischmann rail and plastic sleepers. It works beautifully. Several members brought locos which performed well and also on show were the new Airfix cement and oil tank wagons. Afternoon tea was supplied by Mrs. Barnes and was enjoyed by everybody.
(Information derived from "Border Bull")

END OF A JOURNEY

We record with regret the death of Capt. John Kerridge who died last year after a short illness. Despite his career as a seafarer Capt. Kerridge never forgot his interest in railways, a fact which was perfectly obvious as soon as one called on him in port and saw the model railway running round the walls of his cabin.

WHAT THE OTHER HALF DOES

Mr. Terence Miller, the Chief Mechanical and Electrical Engineer for the Eastern Region of British Railways, who is supervising the introduction of the various types of diesel electric locomotives on British Railways, has better things to do in his spare time. To prove this he has just completed a model of a South Eastern & Chatham 0-4-4 tank loco in 4 mm scale!



Articles on four-wheelers continue to come in so we hope that readers are still able to sustain their interest in these useful pieces of rolling stock; Keith Cutler continues to keep the ball rolling, this time with an account of the NSWGR 'RU' (bulk wheat) and water wagons. Other interesting articles we expect to have ready for you are "Continental Signalling" by Ivan Laszlo, the fourth of Ivan's series of articles on Continental railways, "A Coupler is Born" by Norm Read, in which he describes how he and Harold Warren developed their new 'O' gauge automatic coupler, and "A Country Workshop", where Jack Makin tells of the ingenious methods by which he has adapted power tools without power.